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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/508,937

04/13/2005

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Q83622

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EXAMINER

LIGHTFOOT, ELENA TSOY

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

07/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---|--|--|
| Office Action Summary | Application No. 10/508,937 | Applicant(s) UTSUNOMIYA ET AL. | |
| | Examiner Elena Tsoy Lightfoot | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/29/09</u> . | 6) <input type="checkbox"/> Other: _____ |

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on June 29, 2009 was filed after the mailing date of the Notice of Allowance on May 29, 2009. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Withdrawal of the Allowable Subject Matter

2. Prosecution on the merits of this application is reopened on claims 1, 4, 5, and 7-20 considered unpatentable for the reasons indicated below:

The indicated allowability of claims 1, 4, 5, and 7-20 is withdrawn in view of the newly discovered reference(s) to Bernd et al (US 5731541) submitted with IDS filed on June 29, 2009 after the mailing date of the Notice of Allowance on May 29, 2009. The only independent Claim 1 was allowed because the prior art of record did not teach or suggest “the stages of the multi-stage gasket having particular geometries, *wherein the center of the cross section of each successively applied stage is offset outward of the previously applied stage*”. Claims 4, 5, and 7-20 were allowed as further limiting claim 1. However, Bernd et al teaches that the claimed profile of the multi-stage gasket offers improved elasticity aided both by the compressibility and by the bending ability of the profile (See Fig. 5 and column 7, lines 37-46).

Rejections based on the newly cited reference(s) follow.

Status of the Claims

Claims 1, 4, 5, and 7-20 are pending in the application.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-5, 7-8, 16-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakamatsu (JP 2001182836 A) in view of Bernd et al (US 5731541).

Wakamatsu discloses a process for producing a gasket for any articles by extruding a gasket material from an extrusion orifice of a three-dimensional automatic coating controlling apparatus onto a cover (See Fig. 4) and then curing the extruded gasket material (See P26), wherein a ratio (h/w) of a height (h) of the gasket to a line width (w) thereof on a joint surface between the gasket and the cover member is in the range of ≥ 1 (See Claims 1 and 4; P38), e.g. 1.08 (See P27), e.g. 1.5 (See P16). The gasket material includes UV curable polyurethanes, silicone rubber (See P33). The gasket material is applied *uniformly* (See P22), i.e. the same h/w ratio is achieved in at least 80% or more portion of the gasket. Rotating a dispenser provides uniform cross sectional form of the extruded gasket material (See P21-22). Wakamatsu teaches that the gasket material includes UV-curable resin (See P33). It is the Examiner's position that step of curing of the UV-curable resin is implied.

Wakamatsu discloses that a two-stage gasket may be applied by extruding the gasket material onto the applied gasket material (See Fig. 18B).

Wakamatsu fails to teach that the multi-stage gasket includes a center of a cross section of the n-stage gasket is offset from a center of a cross section of the (n-1)-stage gasket outwardly relative to a center of the cover member" (Claim 1).

However, Bernd et al teaches that as a result of the inclination of the maximum cross-sectional dimension of the sealing profile 813a relative to the direction of the joint between the two housing proportions, the elasticity is aided both by the compressibility and by the bending ability of the profile. In other words, Bernd et al teaches that the claimed profile of the multi-stage gasket offers improved elasticity aided both by the compressibility and by the bending ability of the profile (See Fig. 5 and column 7, lines 37-46). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the multi-stage gasket in Wakamatsu to have claimed profile with the expectation of providing the desired improved elasticity aided both by the compressibility and by the bending ability of the profile, as taught by Bernd et al.

5. Claims 1, 4, 5, and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (JP 2001225392 A) in view of Bernd et al '541.

Watanabe et al discloses a process for producing a gasket for hard disc drive used in electronic equipment which is integrated with a cover by extruding a gasket material from an extrusion orifice of a three-dimensional automatic coating controlling apparatus onto the cover and UV curing the extruded gasket material (See P30), wherein a ratio (h/w) of a height (h) of

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the gasket to a line width (w) thereof on a joint surface between the gasket and the cover member is in the range of ~ 1 (See Fig. 6) in a 80% or more portion of the gasket (See Abstract).

It is the Examiner's position that the ratio of ~ 1 is achieved in at least 80% or more portion of the gasket because it is formed by the automatic coating controlling apparatus using the same gasket material.

Watanabe et al fails to teach that a multi-stage gasket includes a center of a cross section of the n-stage gasket is offset from a center of a cross section of the (n-1)-stage gasket outwardly relative to a center of the cover member" (Claim 1).

However, Bernd et al teaches that a flexible, sealing layer 8 consisting of **one or more** strips can be applied to the edges of rigid edges of a rigid plastics part 3 by means of an applicator needle 6 (See FIG. 1 and column 4, lines 61-64). The elastic seal may be formed of complicated shapes by guiding a needle or nozzle several times over at least predetermined areas of the section on which the flexible screening profile is to be provided, in order to produce a multi layer screening profile, and thus forming an accurately predetermined profile section. This advantageously makes it possible to produce a predetermined cross sectional profile in several successive operations, either by having the same nozzle passing several times over the place in question or by having a plurality of nozzles successively applying different extruded strips which together form the desired seal. Preferably, this method can also be used to produce profile cross sections having predetermined properties of elasticity, which is achieved not on the basis of compressibility but on the basis of bending deformation as is the case with bent lip profiles or hollow profiles. See column 3, lines 35-51. Bernd et al further teaches that as a result of the inclination of the maximum cross-sectional dimension of the sealing profile 813a relative to the

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direction of the joint between the two housing proportions, the elasticity is aided both by the compressibility and by the bending ability of the profile profile (See Fig. 5 and column 7, lines 37-46). In other words, Bernd et al teaches that the claimed profile of the multi-stage gasket offers improved elasticity aided both by the compressibility and by the bending ability of the profile (See Fig. 5 and column 7, lines 37-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a multi-stage gasket in Watanabe et al instead of one-stage gasket, the multi-stage gasket having claimed profile with the expectation of providing the desired improved elasticity aided both by the compressibility and by the bending ability of the profile, as taught by Bernd et al.

As to claim 9, the gasket material is extruded under air pressure (claimed pneumatic-type extruder) (See P18).

As to claims 10-15, Watanabe et al teaches that gasket material is thixotropic that maintains high viscosity in a static state but low viscosity low viscosity upon extrusion (See P23) that has viscosity of 10,000-80,000 mPa-s at 20 rpm and 200,000-500,000 mPa-s at 2 rpm (See P23).

It is the Examiner's position that viscosity and shear rate of Watanabe et al overlap claimed ranges. It is held that overlapping ranges are *prima facie* evidence of obviousness. *In re Malagari*, 184 USPQ 549 (CCPA 1974). Therefore, it would have been obvious to one having ordinary skill in the art to have selected the portion of Watanabe et al's range that corresponds to the claimed range. If this position could be argued, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum

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values of the relevant viscosity and shear rate parameters (including those of claimed invention) in Watanabe et al through routine experimentation depending on particular coating composition in the absence of a showing of criticality.

As to claims 16-17, Watanabe et al teaches that a gasket material contains mainly acrylic-modified urethanes such as *urethane acrylate* oligomers (See column 2, lines 27-29).

6. Claims 1, 4-5, 9, and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabuchi et al (US 5,945,463) in view of Bernd et al '541.

Kawabuchi et al discloses a method of making a gasket with integrated cover for hard disk equipment (See column 8, lines 44-50) by extruding a gasket material from an extrusion orifice of a three-dimensional automatic coating controlling apparatus onto the cover and curing the gasket material while extruding using UV apparatus that is moved together with a dispenser (See Figs. 1 and 2; column 9, lines 23-40). The gasket is generally formed to a shape an approximate half circle having a width of the part in contact with the substrate of 1 to 3 mm and a height from the surface of the substrate of about 0.5 to 1.5 mm (See column 9, lines 59-62), i.e. with h/w ratio within a range of 0.5-1.5 to 0.167-0.5.

Note that h/w ratio of Kawabuchi et al overlap claimed range of 0.8-3.0. It is held that overlapping ranges are *prima facie* evidence of obviousness. *In re Malagari*, 184 USPQ 549 (CCPA 1974). Therefore, it would have been obvious to one having ordinary skill in the art to have selected the portion of Kawabuchi et al's range that corresponds to the claimed range.

It is the Examiner's position that the h/w ratio is achieved in at least 80% or more portion of the gasket because it is formed by the automatic coating controlling apparatus using the same gasket material.

Kawabuchi et al fails to teach that a multi-stage gasket includes a center of a cross section of the n-stage gasket is offset from a center of a cross section of the (n-1)-stage gasket outwardly relative to a center of the cover member" (Claim 1).

Bernd et al is applied here for the same reasons as above. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a multi-stage gasket in Kawabuchi et al instead of one-stage gasket, the multi-stage gasket having claimed profile with the expectation of providing the desired improved elasticity aided both by the compressibility and by the bending ability of the profile, as taught by Bernd et al.

As to claim 15, the gasket material has a hardness of e.g. 30-44 (See Table 1).

As to claims 16-17, Kawabuchi et al teaches that a gasket material contains mainly acrylic-modified urethanes such as urethane acrylate oligomers (See column 2, lines 27-29).

7. Claims 7-15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al '392 in view of Bernd et al '541 or over Kawabuchi et al '463 in view of Bernd et al '541, as applied above, and further in view of Wakamatsu '836.

The cited prior art fails to teach that the dispensing part is rotated (Claims 7-8, 20); and the extrusion orifice has a cross-sectional shape selected from ellipse, semi-ellipse formed by cutting a part of ellipse along a line parallel with the minor axis, rhombus, quadrangle and triangle, and is rotated according to the moving direction of the extrusion orifice such that a minor axis of ellipse, a straight line of semi-ellipse, a short diagonal line of rhombus, a short side of quadrangle or a base of triangle is always kept substantially perpendicular to the moving direction (Claim 8).

Wakamatsu teaches that uniform cross-sectional shape of the extruded gasket material is provided (See P21-22) by using a rotating dispenser having an extrusion orifice of a cross-sectional shape selected from *ellipse, semi-ellipse, rhombus quadrangle and triangle* (See P15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a rotating dispenser in the cited prior art having an extrusion orifice of a cross-sectional shape selected from ellipse, semi-ellipse, rhombus quadrangle and triangle with the expectation of providing the desired uniform cross sectional form of an extruded gasket material, as taught by Wakamatsu.

8. Claims 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakamatsu '836 in view of Bernd et al '541 or over Kawabuchi et al '463 in view of Bernd et al '541, as applied above, and further in view of Watanabe et al '392.

The cited prior art fails to teach that that: (i) the gasket material is thixotropic composition; (ii) the gasket material is extruded under air pressure (claimed pneumatic-type extruder).

As to (i), Watanabe et al teaches that a thixotropic UV-curable composition that maintains high viscosity in a static state, e.g. 200,000-500,000 mPa-s at 2 rpm (See P23) but low viscosity, e.g. 10,000-80,000 mPa-s at 20 rpm, can be used as a gasket material (See P23) that easily dispensable but maintains shape after extrusion (See P23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a thixotropic UV-curable composition as a gasket material and rotating dispenser in the cited prior art with the expectation of providing the desired easy extrusion due to

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low viscosity and desired shape of the extruded gasket due to high viscosity in a static state, as taught by Watanabe et al.

As to (ii), Watanabe et al teaches that the gasket material is extruded under air pressure (claimed pneumatic-type extruder) (See P18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a pneumatic-type extruder in the cited prior art since Watanabe et al teaches that pneumatic-type extruder is suitable for extruding a gasket material.

9. Claims 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakamatsu '836 in view of Bernd et al '541 or over Watanabe et al '392 in view of Bernd et al '541, as applied above, and further in view of Kawabuchi et al '463.

The cited prior art fails to teach that an irradiation device is moved in association with the extrusion orifice of the three-dimensional automatic coating controlling apparatus.

Kawabuchi et al teaches that a gasket material extruded from an extrusion orifice onto the cover may be cured while extruding using UV apparatus that is moved together with a dispenser to maintain an extruded shape (See Figs. 1 and 2; column 9, lines 23-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used UV apparatus that is moved together with a dispenser for curing a gasket material in the cited prior art with the expectation of providing the desired maintaining extruded shape, as taught by Kawabuchi et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy Lightfoot whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

July 9, 2009

/Elena Tsoy Lightfoot/